THE EDGE

VISION DRILLS FOR ATHLETES

TRAIN YOUR EYES | SHARPEN YOUR MIND | ELEVATE YOUR GAME

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WELCOME!

Your eyes do more than help you see — they guide how you move, react, and connect with the world around you. Just like your muscles, your visual system can be strengthened through intentional training. These simple and commonly used exercises are designed to enhance focus, coordination, and reaction time — skills that are crucial for many sports, but also helpful in our daily lives.

HOW ELITE ATHLETES SEE DIFFERENTLY

High-level athletes don't just move faster — they SEE faster and process visual information more quickly and accurately than the average person. Their eyes and brain work together with above average efficiency: tracking moving targets, shifting focus between distances, and reacting to subtle visual cues in milliseconds. This refined visual coordination gives them a measurable edge — in timing, precision, and decision-making. The good news? With practice, anyone can train the same visual pathways that professional athletes rely on to perform at their peak.

BEFORE GETTING STARTED

Before you get going, it's important to make sure that you've had a comprehensive eye exam with your optometrist to manage or correct any visual barriers to performance.

DID YOU KNOW?

- **BASEBALL / SOFTBALL** - Major League batters only have about 0.4 seconds to track a fastball traveling over 90 mph (145 km/h), yet they can identify the pitch type, predict where the ball will be before it arrives, and decide to swing in under 150 milliseconds.
- **HOCKEY** - Professional hockey players make visual decisions every 200–300 milliseconds all while tracking a puck moving up to 100 mph. Their eyes are constantly shifting between the puck, their teammates, and open ice — a well-orchestrated display of peripheral vision, tracking, and anticipation.
- **SOCCER / FOOTBALL** - Elite soccer players scan the field four to six times per second — compared to just two to three times per second for amateur athletes. This faster “visual sampling rate” gives them better spatial awareness for faster passing decisions.
- **TENNIS** - A professional tennis serve can average around 110 mps, giving players less than 0.5 seconds to gather visual information, process it, and react. They rely heavily on dynamic visual acuity (keeping a clear image of the moving target), tracking, and anticipation — predicting movement before it happens.
- **BASKETBALL** - Top basketball players use peripheral awareness to assess the entire court while monitoring the location and movement of their teammates, the opposing team, and the ball. Their vision needs to span nearly the entire court in a single glance.

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GOALS

1. **Learn how your eyes work as a team** — and how to use that teamwork to give your performance more power and precision.
2. **Train your brain through your eyes.** These exercises strengthen the connection between what you see and how your body reacts, helping you build sharper reflexes over time.
3. **Level up your visual skills and recovery.** You'll develop abilities beyond the average person and create the right conditions for learning, focus, and peak performance.
4. **Connect your mind and body.** When your visual system works efficiently, you can react faster, move smoother, and perform at your best with less effort.
5. **Build better visual thinking**. Improve your attention, awareness, control, and flexibility — and strengthen how your eyes, brain, and body work together to track, focus, and react.
6. **See the game the way it really is.** Train your eyes and brain to match what you think you see with what's actually happening around you — so your reactions are faster and more accurate.

The exercises in this program are appropriate for young athletes to read and understand on their own and minimal extra materials or equipment is needed! The exercises can be printed, enlarged if needed, and laminated for use in performance training for individuals or groups. They can also be combined while performing other sport-specific skills such as stick handling, dribbling a ball, or passing to teammates.

GETTING STARTED

- Give yourself 20-30 minutes to complete 3-4 exercises.
- Do your exercises at least 3-5 days per week for 8-12 weeks - the more often you do them, the faster you'll improve!
- The best time to do your exercises is right before bedtime since your neurological circuits are solidified while you sleep.
- Some athletes notice improvements after 2-3 sessions, while others may not notice changes until near the end of the 12 weeks. It's normal and ok for progress to show up differently.
- Do your best, stay positive, and enjoy the process!

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AT HOME VISION THERAPY

Doing daily oculomotor exercise as prescribed is a key component to success in improving the athlete's short- and long-term vision processing skills. Build awareness of the feeling of the eye muscles during therapy so that the brain can make a record of it.

The best time to do your exercises is at night before bedtime. The neural pathways are built while you sleep!

Do your best and stay positive in the process.

SPORTS VISION FUNDAMENTALS

These are some of the visual processing skills we'll be using and training during this program.

ACCOMMODATION

The ability to shift focus between near and far — like zooming a camera lens.

CRANIAL NERVES II, III

BINOCULAR ALIGNMENT

The ability of both eyes to work together and point at the same target. This allows the brain to merge both images into one and give us depth.

CRANIAL NERVES II, III, IV, VI

VESTIBULAR OCULAR REFLEX (VOR)

This reflex keeps your vision steady while your head moves, giving balance and focus while in motion.

CRANIAL NERVES II, III, IV, VI, VIII

VAGUS NERVE

This nerve calms your body and controls your breathing and heart rate. Activating it by slow breathing or visualization drills improves composure, recovery, and focus under pressure.

CRANIAL NERVE X

CENTRAL-PERIPHERAL INTEGRATION

Using clear central vision and wide peripheral vision together. Helps to lock in on a target while being aware of the whole play.

CRANIAL NERVE II

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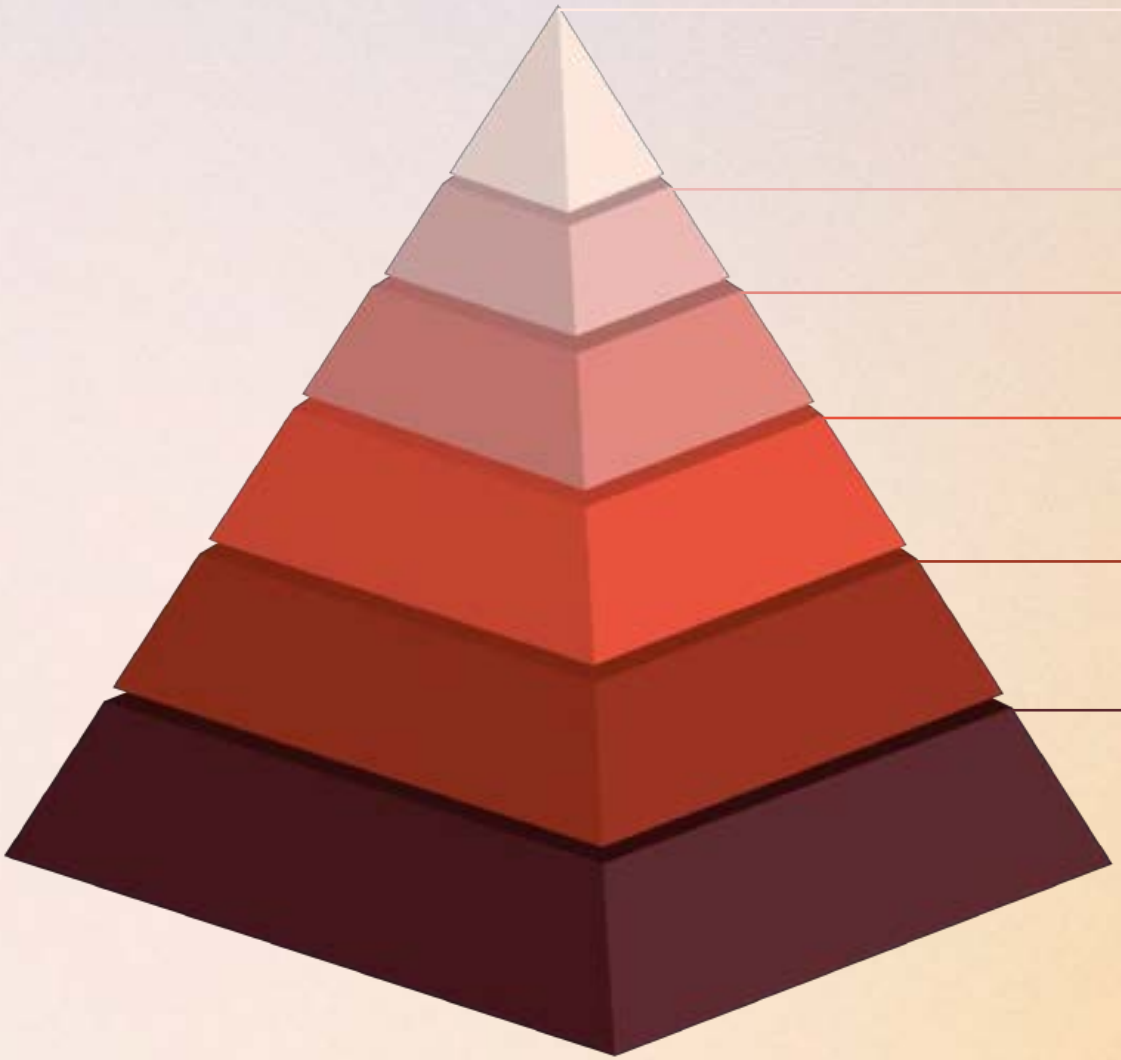
WARREN'S HIERARCHY OF VISUAL PERCEPTUAL SKILLS

This pyramid shows how higher-level visual processing builds upon foundational visual functions like oculomotor control and visual fields/peripheral vision.



VISUAL COGNITION

VISUAL MEMORY

PATTERN RECOGNITION
shape - contour - features

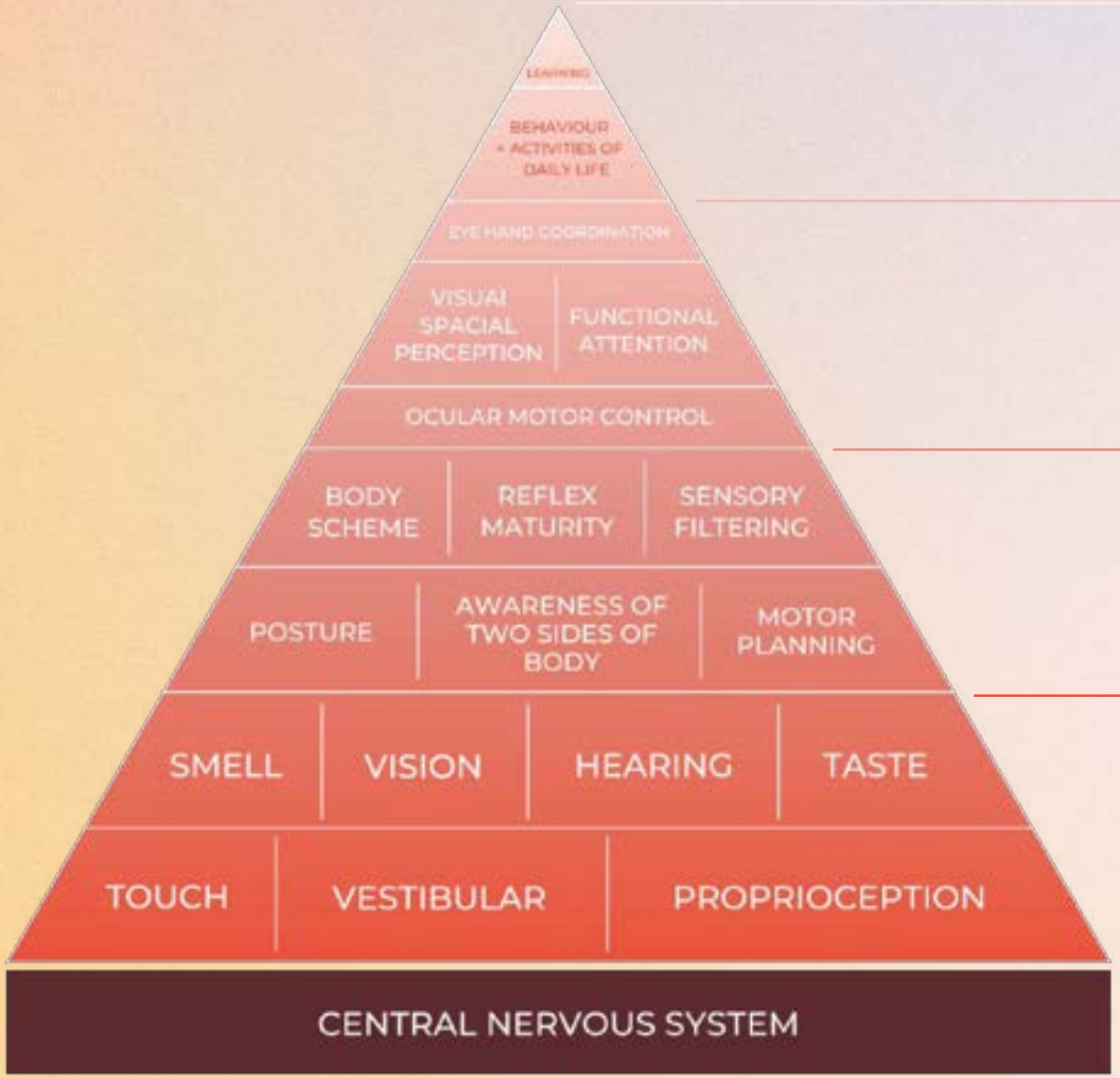
SCANNING

VISUAL ATTENTION

REGISTER VISUAL INPUT
1. Oculomotor
2. Visual fields
3. Acuity

SENSORY PYRAMID OF LEARNING

The Sensory Pyramid of Learning explains how our ability to learn and perform complex tasks is built upon foundational sensory systems.



COGNITION

PERCEPTUAL MOTOR DEVELOPMENT

SENSORY MOTOR DEVELOPMENT

SENSORY SYSTEMS

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A LITTLE NOTE ABOUT SCREEN TIME...

ZERO SCREEN TIME 2-3 HOURS BEFORE GAMES OR PRACTICE.

Limit screen time to 2-3 hours/day.

Your eyes are like muscles, and screens are like holding a plank for your visual system. Scrolling, gaming, or watching TV right before practice can make your focusing muscles tired and slow. That means when you hit the ice, field, or court, your eyes might not track or focus as fast as they could.

Set yourself up for success by giving your eyes 2-3 hours of screen-free time before games or practice. Look outside, stretch, or do a few quick vision drills instead. Your focus will be sharper, your reactions faster, and you'll have more energy to play because your eyes are warmed up and ready to perform.

MINDSET MATTERS

GROW THROUGH CHALLENGE

The way you think affects the way you play. When you believe your skills can improve, and that the feeling of pressure is actually working FOR you (not against you) your brain learns faster, your focus sharpens, and your body performs better.

A **growth mindset** means believing that your abilities can improve with effort and practice. It's not about being "naturally good," it's about getting better every time you train.

A **stress-is-enhancing mindset** means that you see nerves or challenges as fuel, not danger. A bit of pressure helps your brain sharpen focus, your heart pump energy, and your body rise to the occasion. Next time you feel nervous, instead of thinking "I'm stressed," try "My body's getting ready." That small shift turns tension into power and helps you perform your best — in sports, school, and life!

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EXERCISE 1: ACCOMMODATION

You will be working on:

- Quickly locating targets, identifying them, and processing sound
- Timing and rhythm
- Opening up your peripheral vision and integrating your central vision
- Maintaining your focus and quieting mental noise

DISCLAIMER - athletes with oculomotor challenges, learning challenges, dyslexia, letter crowding, amblyopia, or who are over the age of 40 may struggle with this exercise. Mild struggles when learning the exercise is expected, but if excessive unexpected struggle is noted, please visit your optometrist to investigate any underlying concerns.

You will need:

- One large chart (print from PDF)
- One small chart (print from PDF)
- Metronome or Metronome App
- Glasses or contact lenses if you wear them

Procedure:

- Tape the large chart on the wall about 10 ft away
- Cut out the small chart and hold it where you would hold a book. If the letters and numbers are too small, you can hold one of the large charts instead. Make sure the charts are different.
- Cover your left eye with a patch or your hand.
- Set your metronome to 40bpm. This is the rhythm at which you'll start the exercise. It's OK if it feels slow at first!
- Read the first letter on the distance chart (top left corner) and say it out loud. Then focus on the top left letter of the near chart and say it out loud to the beat of the metronome.
- Keep shifting between the two charts until your have finished and only use your eyes to keep track of where you are.

Large Near-Far Chart
10 feet from your face

Small Near-Far Chart
14-16 inches from your face

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Repeat the exercise with the right eye covered and then with both eyes together and you've completed one round.

- Aim to do one round per day 3-5 days per week.
- You've mastered the level when you can complete the exercises with the metronome at 60bpm and not fall behind. Track your progress on the tracking sheet and move up to the next level.

It's important to say the letters out loud. By doing so, you activate more of your brain, linking what you see with how quickly you think and respond. It also keeps your focus sharp and prevents your mind from drifting.

LEVEL 1

- While standing, complete the charts reading left to right, and up and down (like you'd normally read a book) without slowing down in the middle or the end of the chart.
- **Read the letters aloud**.

You have mastered this level when you are able to do all of this accurately at 60 bpm without slowing down. Then move up to LEVEL 2.

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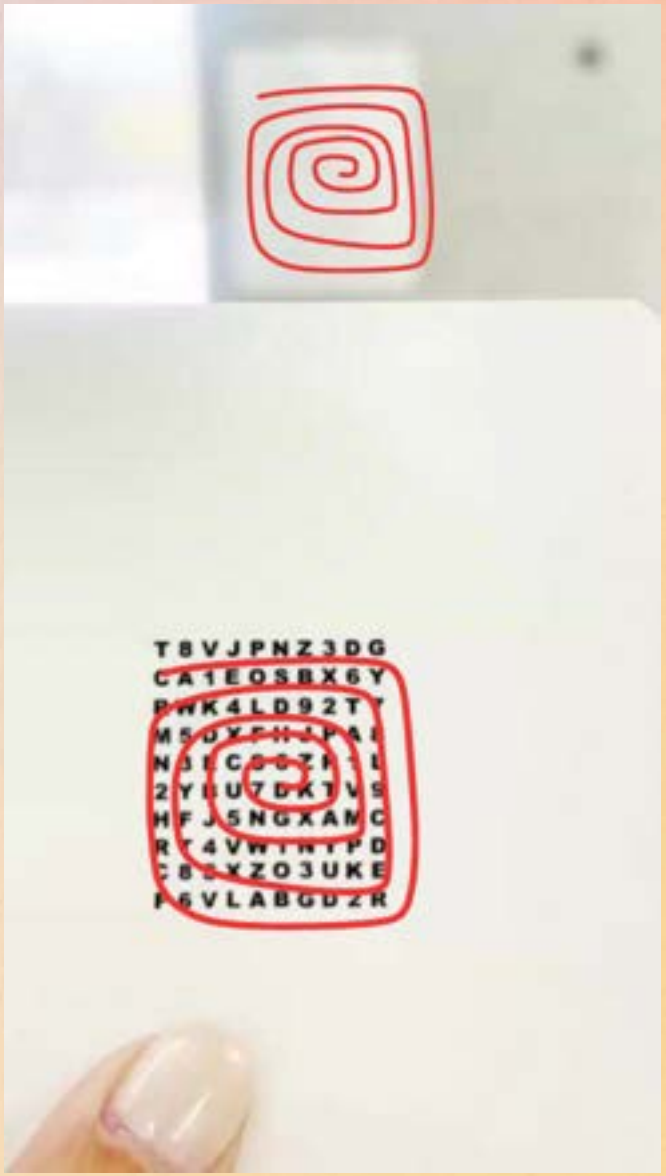
LEVEL 2

- Stand up
- **Read the chart in a spiral pattern.**
- Start with the letters on the outside and move inward in a square formation, one square at a time until you reach the centre.
- Start with your left eye closing, using only your right eye, then do it again with your right eye closed, using your left eye, then with both eyes together.
- Ensure that you are saying every letter or number out loud.

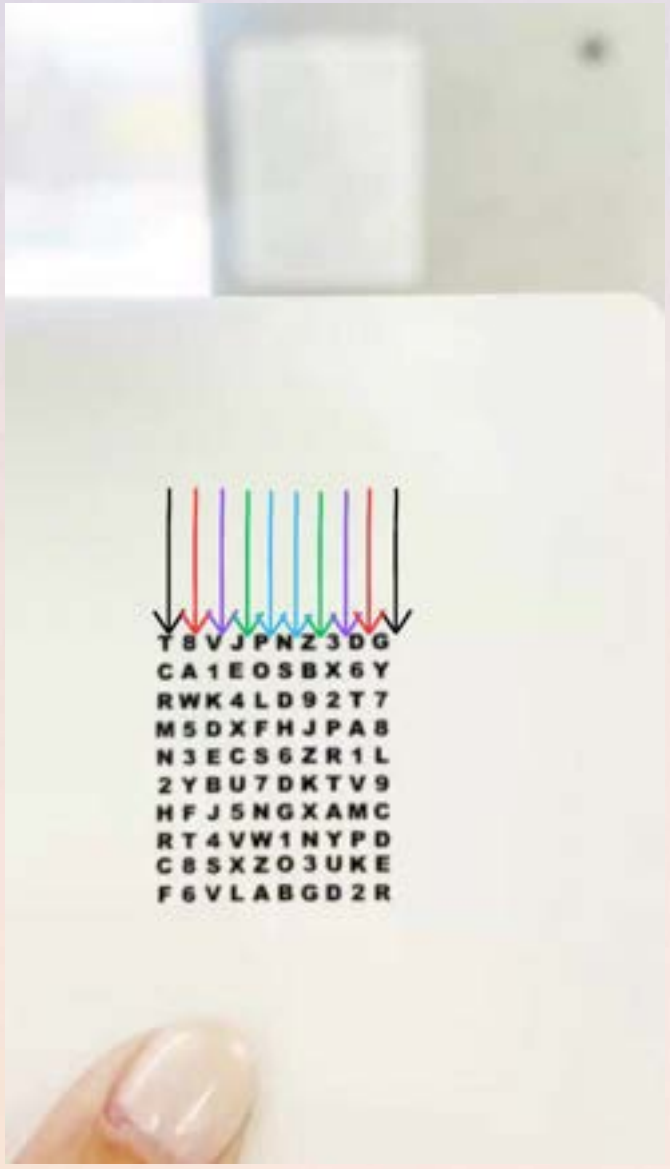
You've completed this level when you can accomplish this at 60 bpm without slowing down. Then move on to LEVEL 3.



LEVEL 3

- Stand up.
- **Read the chart from the top down in a column format.**
- Start by reading from the first column and then the last column. Then read the second column and the second-to-last, then third and the third-to-last, and then fourth to the fourth-to-last. Finally, read the the two middle columns.
- Ensure that you are saying every letter or number out loud..

You've completed this level when you can accomplish this at 60 bpm without slowing down. Then move on to LEVEL 4.



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LEVEL 4

- Repeat LEVEL 1 but **balance on your right foot.**
- Repeat LEVEL 1 again, but **balance on your left foot.**

You've completed this level when you can accomplish this at 60 bpm without slowing down or losing balance on either foot. Then move on to LEVEL 5.

LEVEL 5

- Repeat LEVEL 2 but **balance on your right foot.**
- Repeat LEVEL 2 again, but **balance on your left foot.**

You've completed this level when you can accomplish this at 60 bpm without slowing down or losing balance on either foot. Then move on to LEVEL 6.

LEVEL 6

- Repeat LEVEL 3 but **balance on your right foot.**
- Repeat LEVEL 3 again, but **balance on your left foot.**

You've completed this level when you can accomplish this at 60 bpm without slowing down or losing balance on either foot. Then move on to LEVEL 7.

LEVEL 7

- Repeat LEVEL 1 but **balance on your right foot and turn your head from left to right each time you read a new letter or number.**
- Repeat LEVEL 1 again, but **balance on your left foot and turn your head from left to right each time you read a new letter or number.**

You've completed this level when you can accomplish this at 60 bpm without slowing down or losing balance on either foot. Then move on to LEVEL 8.

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LEVEL 8

- Repeat LEVEL 2 but **balance on your right foot and turn your head from left to right each time you read a new letter or number.**
- Repeat LEVEL 2 again, but **balance on your left foot and turn your head from left to right each time you read a new letter or number.**

You've completed this level when you can accomplish this at 60 bpm without slowing down or losing balance on either foot. Then move on to LEVEL 9.

LEVEL 9

- Repeat LEVEL 3 but **balance on your right foot and turn your head from left to right each time you read a new letter or number.**
- Repeat LEVEL 3 again, but **balance on your left foot and turn your head from left to right each time you read a new letter or number.**

You've completed this level when you can accomplish this at 60 bpm without slowing down or losing balance on either foot. Then move on to LEVEL 10.

If you finish the 9 levels before 8 weeks are up (or if you want to keep going), do Level 9 again but add core exercises—for example, stand on a Bosu ball, ride a stationary bike, or hold a plank. Then keep increasing the metronome speed to make the exercise increasingly more challenging. Move on to the next level once you've mastered it.

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EXERCISE 2: PERIPHERAL AWARENESS
(CENTRAL-PERIPHERAL INTEGRATION)

Training your peripheral vision helps you to see more of the play, anticipate movement sooner, and react faster without losing focus of the main target.

You will need:

- Printed copies of the Peripheral Awareness Charts (find in The Edge - Printables PDF). Charts can be enlarged to 16x20, 18x24, or 24x36 and taped to a wall for group training or combining the exercises with skills like balancing, stick handling, or dribbling.
- Glasses or contact lenses, if you wear them.

LEVEL 1

- Start with the landscape (horizontal) Peripheral Awareness Chart.
- Hold it about 16 inches in front of you and focus on the icon in the centre. Keep your eyes fixed on the icon without looking at the numbers around it.
- While still looking at the icon, try to find the numbers in order from 1 to 18 using your side (peripheral) vision.

Only do this once a day.

You've finished this level after three sessions—don't try to memorize the chart!

After three sessions, move on to LEVEL 2.

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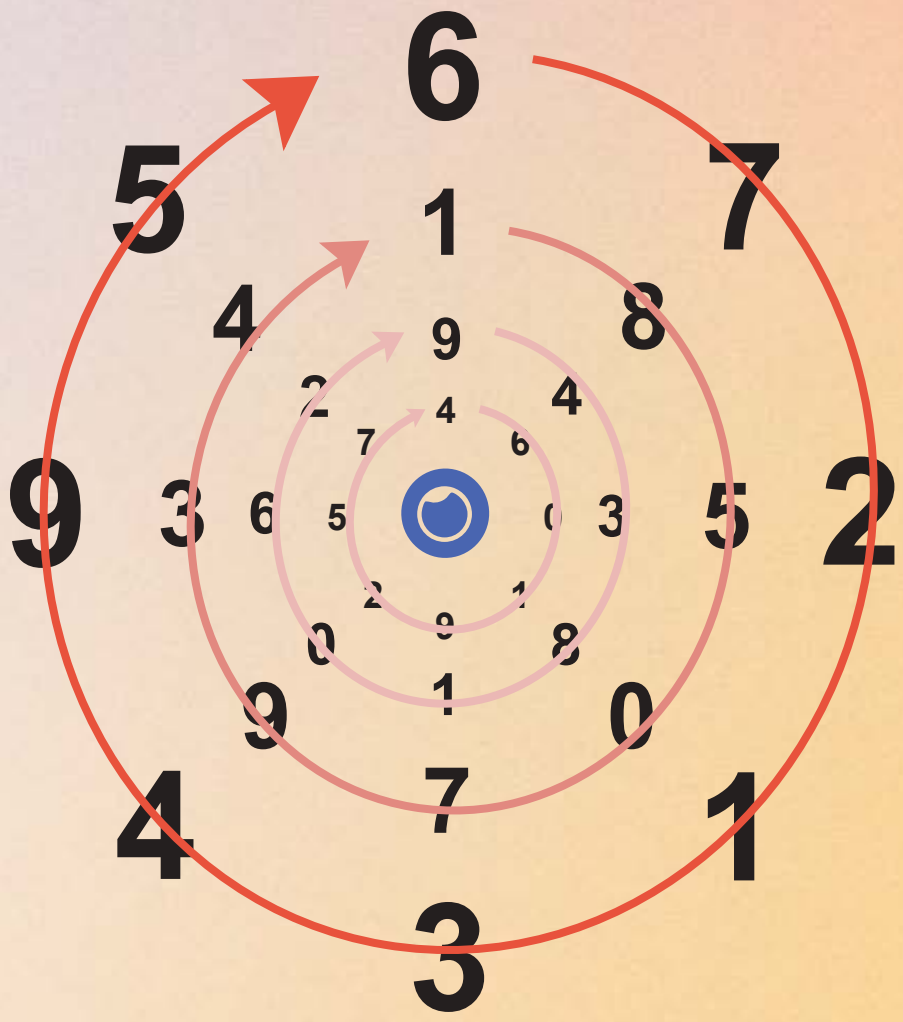
LEVEL 2

- Start with the other Peripheral Awareness Chart.
- While focusing on the icon in the centre (or use your thumb as a target) and without moving your head or eyes away from the icon, bring all the numbers in the innermost circle into focus at the same time. They should seem to “pop.”
- Notice if any numbers or letters disappear.
- Keep your side vision open and identify the numbers or letters in the inner circle using only your peripheral vision.
- Move outward by each circle and do the same. Using only your periphery, identify each number or letter until you’ve completed the whole chart.



Do three sessions of each chart:

Letters
Numbers
Letters + Numbers

Once you’ve completed all three charts three times, move on to LEVEL 3.

LEVEL 3

Do three sessions of all the charts (landscape, letters, numbers, and letters + numbers) while also engaging your core. You can:

- Stand on one leg
- Ride a stationary bike
- Stand on a Bosu ball
- Do a plank or side plank
- Or try other core or isotonic exercises

If you finish LEVELS 1-3 and would like to keep going, repeat LEVEL 3 once a week. To keep it challenging, repeat the exercises with an enlarged chart taped to the wall while doing sport-specific skills like stick handling or dribbling a ball.

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EXERCISE 3: VESTIBULAR OCULAR REFLEX

Training your vestibular-ocular reflex helps you keep your eyes steady and focused while your head and body move—so you can track the action smoothly and stay balanced during fast plays.

You will need:

- Nothing!
- Glasses or contacts, if you wear them.

LEVEL 1

- Focus on a fixed object in the distance, like a doorknob, or hold your thumb out in front of you. Keep eyes on the target.
- Start shaking your head from left to right while keeping your eyes fixed on the target. Keep the image clear. Begin with small, slow nods (about 10 degrees) and gradually increase both the range and speed of your head movement.
- Do 20 cycles (one cycle = one full shake left to right).

Move on to LEVEL 2 when you feel you've mastered this.

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LEVEL 2

- Repeat LEVEL 2 but **add walking** (you can use your thumb as the target if you need to).
- Do 20 successful head shakes left and right while walking.

Move on to LEVEL 3 when you feel you've mastered this.

LEVEL 3

- Find a space on the ground where you would room to spread out your arms and legs. Lay on your back and find a target to look at directly above you, such as something on a ceiling fan, a smoke alarm, a light fixture (that is turned off), etc. **Make "snow angel" movements with your arms and legs**.
- Once you've mastered the coordination of your arm and leg movements, add the left to right head shake while maintaining your focus on the target above you.
- Do 25 snow angels while shaking your head and focusing on a target above you.

Once you feel you've mastered all 3 levels, do one of these exercises once a week.

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EXERCISE 4: JUGGLING

Juggling isn't just for clowns or a fun party trick. It's a fantastic brain and body exercise for athletes. Juggling trains your eyes to track moving targets, improves hand-eye coordination, and strengthens your focus under pressure. As you get better, your timing, rhythm, and reaction speed all sharpen — skills that help you on the ice, field, or court. Plus, it builds your patience and persistence, building the calm focus for which great athletes are known.

You will need:

- At least two balls or objects that can be juggled.
- Glasses or contacts, if you wear them.

- **Start by juggling 2 objects.**
- Try juggling the objects for 5 minutes straight.
- Do this for every day until you have mastered it, and then try 3 objects.
- Keep leveling up by number of objects and length of time.
- Juggle for at least 5 minutes every day.

There are so many great resources to learn to juggle online. Here are some of our favourites that we found from SimpliFaster and Taylor Tries:

- **Juggling: One Skill all Athletes Can Benefit From**
- **Learn to Juggle 3 Balls - Beginner Tutorial**

Click here for juggling ball set

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Track your progress

Name: _____

Age: _____

Sport(s): _____

Position(s): _____

- ☐ I have read through the program
- ☐ I understand the process
- ☐ I am committed to progress over perfection

WEEK	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	LEVEL ACHIEVED
1						**ACC** 1 2 3 4 5 6 7 8 9 **PA** 1 2 3 **VOR** 1 2 3 **Juggling** Y N
2						**ACC** 1 2 3 4 5 6 7 8 9 **PA** 1 2 3 **VOR** 1 2 3 **Juggling** Y N
3						**ACC** 1 2 3 4 5 6 7 8 9 **PA** 1 2 3 **VOR** 1 2 3 **Juggling** Y N
4						**ACC** 1 2 3 4 5 6 7 8 9 **PA** 1 2 3 **VOR** 1 2 3 **Juggling** Y N
5						**ACC** 1 2 3 4 5 6 7 8 9 **PA** 1 2 3 **VOR** 1 2 3 **Juggling** Y N
6						**ACC** 1 2 3 4 5 6 7 8 9 **PA** 1 2 3 **VOR** 1 2 3 **Juggling** Y N
7						**ACC** 1 2 3 4 5 6 7 8 9 **PA** 1 2 3 **VOR** 1 2 3 **Juggling** Y N
8						**ACC** 1 2 3 4 5 6 7 8 9 **PA** 1 2 3 **VOR** 1 2 3 **Juggling** Y N

ACC = Accomodation
PA = Peripheral awareness
VOR = Vestibular Ocular Reflex

What aspects of your performance improved during the program?

Did any of your statistics improve during the program?

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Keep track of your progress in the table provided in The Edge - Printables PDF.

All the charts you will need will also be in The Edge - Printables.

These materials can be printed onto standard 8.5” x 11” paper or enlarged to your preferred size.

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THANK YOU FOR PARTICIPATING!

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403.930.0025
hello@sphereoptometry.ca
140 Mahogany Centre SE, Calgary, AB

sphereoptometry.ca
@sphereyyc